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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KAWSAR, ABDULLAH AL

ART UNIT	PAPER NUMBER
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2109

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05/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/650,107	Applicant(s) HUNT ET AL.	
	Examiner Abdullah-Al Kawsar	Art Unit 2109	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08/26/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/26/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-34 are pending.

Specification

2. Abstract is objected because the term “attempting” is not a concrete solution to bring the resource tier in compliance with the management policy.

Claim Objections

3. Claim 31 is objected to because of the following informalities: claim 31 should be a computer program product. Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1 – 11, and 24 – 34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. While managing a mutli-tired resource by automatically bringing the resource tier in compliance with the management policy of the resource is not in compliance could reasonably be tangible result. Actually claims 1 and 24 appear to have not claimed result under the condition when the resource is in compliance with the management policy to form the basis statutory subject matter under 35 U.S.C. 101.

Claims 2 – 11 and 25 – 34 are rejected for failing to cure the deficiency of the above rejected claims 1 and 24 respectively.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 – 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As the term “attempting” raises doubt as to whether the resource tier will be in compliance because it is not a concrete solution to bring the resource tier in compliance with the management policy.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 – 10, 12, 13 - 22 and 24 - 33 are rejected under 35 U.S.C. 103(a) being unpatentable over “The use of life expectancy to manage lotus notes email storage”(Bucky) in view of “Tivoli Storage Network Manager”(Tivoli).

Art Unit: 2109

As per claim 1, Bucky discloses:

- *determining if a resource tier is in compliance with a management policy* (page 5 col 2 lines 7 – 11, “We require a process to run each week to collect and store the observations.” and page 6 col 2 lines 21 – 30, “Each line contains statistics for a file including the calculated growth rate and the impact of that file on the life expectancy of the file system. The line includes a ‘move’ checkbox. If the administrator checks the box, a calculation is made changing the file system summary statistics mentioned above. In this way, the administrator can alternately check and uncheck boxes associated with different files to develop a move plan that meets their objectives”) statistics from the process shows if a system is in compliance with the management policy in terms of life expectancy.

However Bucky does not disclose, *automatically attempting to bring the resource tier in compliance with the management policy.*

On the other hand Tivoly discloses:

- *if the resource tier is not in compliance with the management policy, automatically attempting to bring the resource tier in compliance with the management policy* (page 1 col 1 lines 14 19, “Tivoli Storage Network Manager provides features to manage SAN topology, assign available disk resources to managed hosts, and automatically extend file systems using administrator-defined policies.”)

Therefore, it would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Tivoli into the method of Bucky to have a method of automatically bringing the resource tier in compliance with the management policy. The modification would have been obvious because one of the ordinary skills of the art would

Art Unit: 2109

have found it motivated to automatically bring the resource tier in compliance in order to reduce administrative workload and cost.

As per claim 2, the rejection of claim 1 incorporates and further Tivoli discloses:

- wherein automatically attempting to bring the resource tier in compliance with the management policy includes allocating additional capacity to containers belonging to the resource tier until the resource tier is in compliance with the management policy (page 2 col 3 lines 8 – 14, “When a threshold is exceeded, Tivoli Storage Network Manager automatically identifies and formats the appropriate unassigned disk LUNs with the proper file system, and then extends the file system with additional capacity.”) when a system reaches a threshold (expiration date) the system space gets increased automatically.

Therefore, it would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Tivoli into the method of Bucky to have a method of automatically allocating additional spaces belonging to the same container until the resource tier is in compliance with the management policy. The modification would have been obvious because one of the ordinary skills of the art would have found it motivated to use such modification for the purpose of automatically increasing the system space.

As per claim 3, the rejection of claim 2 incorporates and further Tivoli discloses:

- wherein allocating additional capacity to the containers includes utilizing a capacity reserve belonging to the resource tier (Page 1 col 3 lines 5 - 9, “Monitor file systems to automatically assign and extend additional disk resources to maintain continuous application

processing”)extending additional disk resources is allocating additional capacity from reserve(disk resources).

Therefore, it would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Tivoli into the method of Bucky to utilize a capacity reserve belonging to the resource tier. The modification would have been obvious because one of the ordinary skills of the art would have found it motivated to use such modification to assign and extend additional disk space.

As per claim 4, the rejection of claim 2 incorporates and further Bucky discloses:

- wherein allocating additional capacity to the containers includes utilizing available capacity from other containers in the resource system. (Page 4 col 2 lines 12-13, “If space is available elsewhere, a second approach is to move files out of the file system.) having space available elsewhere means space in other containers.

As per claim 5, the rejection of claim 2 incorporates and further Bucky discloses:

- wherein allocating additional capacity to the containers includes allocating additional capacity to containers of higher importance before allocating additional capacity to containers of lower importance (Page 4 col 2 lines 43 – 44 “Administrators can look through the list and select the candidates to move until they reach some desired threshold of new life expectancy. This is necessary because the largest fastest growing files are the prime candidates”) fastest growing files is the container with high priority.

As per claim 6, the rejection of claim 1 incorporates and further Tivoly discloses:

- wherein the management policy includes requiring that an expiration date of the resource tier occur after a maintenance date (page 2 col 2 lines 16 – 20, “By applying policy-driven automation to monitored file systems, Tivoli Storage Network Manager enables you to set policies across an entire SAN, computer group, to individual computers, and to their specific file systems. Tivoli Storage Network Manager continuously monitors these resources as they approach a policy-defined threshold or capacity level.”) threshold is the expiration date for the resource system and the system policy monitors the system form reaching the expiration date.

As per claim 7, the rejection of claim 6 incorporates and further Bucky discloses:

- further comprising calculating the expiration date of the resource tier (page 3 col 2 lines 1- 2, “we can calculate the life expectancy of a file system”) life expectancy is calculated to define the expiration date of a file system(resource tier).

As per claim 8, the rejection of claim 7 incorporates and further Bucky discloses:

- wherein calculating the expiration date of the resource tier includes calculating a life expectancy of each container belonging to the resource tier (page 4 col 1 lines 1 – 5, “ Large installations can have hundreds of servers and thousands of file systems to monitor. Each file system contains a unique set of files with their own growth patterns, which accumulate to produce a different growth pattern for each file system” and lines 10 - 11 “The strategy we’ve chosen is to organize file systems by their life expectancy”) large system is a resource tier with multiple containers (servers) and monitoring their growth rate means calculating the life expectancy for expiration date as claimed.

As per claim 9, the rejection of claim 8 incorporates and further Bucky discloses:

- wherein calculating the life expectancy of the containers includes adjusting the life expectancy of the containers to account for container lead-time (page 3 col 2 lines 18 - 25“we need to keep a size history for each file in the file system. When we want to calculate the growth rate, we create a reconstituted history of the file system based on its current composition. That is, we accumulate the histories of each file currently in the file system creating a new aggregate history and we run a regression analysis against this reconstituted history. This reconstitution is illustrated in Figure 2. It is evident from this figure that our new prediction will be much more accurate than if we used the historical size of the file system alone.”)

As per claim 10, the rejection of claim 1 incorporates and further Tivoly discloses:

- further comprising if the resource tier cannot be brought in compliance with the management policy, alerting that the resource tier is not in compliance with the management policy (page 3 col 1 lines 12 - 13 “Events and data from the SAN are captured and processed providing you with information, alerts, and notification for problem resolution.”) any events(alerts, expiration date) are recorded and processed.

As per claim 12, Bucky discloses:

- means for determining if a resource tier is in compliance with a management policy (page 5 col 2 lines 7 – 11, “We require a process to run each week to collect and store the observations. This process must run successfully on many servers in our Notes domain, which

requires that the servers and the network be available when we collect”) a process is having a policy or system to observe is to confirm the system is in compliance with the policy.)

However Bucky does not disclose, *automatically attempting to bring the resource tier in compliance with the management policy.*

On the other hand Tivoly discloses:

- means for automatically attempting to bring the resource tier in compliance with the management policy if the resource tier is not in compliance with the management policy (page 1 col 1 lines 14 19, “Tivoli Storage Network Manager provides features to manage SAN topology, assign available disk resources to managed hosts, and automatically extend file systems using administrator-defined policies.”) inherently includes means for automatically attempting to bring the resource tier in compliance.

Claims 13 – 22 and 24 - 33 are module and computer readable medium comprising instructions for executing the method of claims 1 - 10 above. They are therefore rejected under the same rationale.

10. Claims 11, 23 and 34 are rejected under 35 U.S.C. 103(a) being unpatentable over “The use of life expectancy to manage lotus notes email storage”(Bucky) in view of “Tivoli Storage Network Manager”(Tivoli) further in view of “Advances in Windows NT storage management”(NT).

As per claim 11, Bucky in view of Tivoli discloses all the elements of claim 11 except *includes compressing data within the resource tier until the resource tier is in compliance with the management policy.*

On the other hand NT discloses:

- wherein automatically attempting to bring the resource tier in compliance with the management policy includes compressing data within the resource tier until the resource tier is in compliance with the management policy (page 6 col 1 lines 27 – 29, “storage management services that are described in this section help administer large collections of files. Some save storage, complementing the role of data compression”)

Therefore, it would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of NT into the method of Bucky and Tivoli to compress data in compliance with the management policy. The modification would have been obvious because one of the ordinary skills of the art would implement a compression method in policy to save disk space and allow more storage.

Claims 23 and 34 are module and computer readable medium comprising instructions for executing the method of claim 11 above. They are therefore rejected under the same rational.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

TITLE: Advances in Windows NT Storage Management, ACM, Volume 31 , Issue 10 (October 1998)

Art Unit: 2109

TITLE: The use of life expectancy to manage lotus notes email storage, CMG conference 1999.

TITLE: Tivoli Storage Network Manager, IBM 2001

TITLE: Resource allocation for multiple applications, US 7146353 B2

TITLE: Methods and architectures for resource management, US 7111297 B1

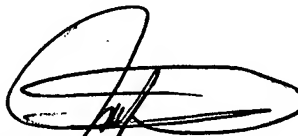
TITLE: Resource manager architecture utilizing a policy manager, US 7,058,947 B1

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdullah-Al Kawsar whose telephone number is 571-270-3169. The examiner can normally be reached on 7:30am to 5:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chameli Das can be reached on 571-270-1392. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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5/21/07